E

OLYMPUS OM SYSTEM

Electronic Flash T20

■ OPERATING INSTRUCTIONS

ELECTRONIC FLASH T20 OPERATING INSTRUCTIONS

We greatly appreciate that you have acquired the special Olympus Electronic Flash T20.
This fully automatic, electronically controlled flash unit is equipped with the epoch-making method "TTL Centralized Control" developed by Olympus, also called TTL Auto Flash. It can also be switched for normal auto/manual control.
We ask you to familiarize yourself with its functions and operation in order to take advantage of all its possibilities in photography.

T20 Flash Photography

Camera	Selection of Mount	Selection of Flash Mode
OM-2 N	**Accessory Shoe 4**	**● TTL Centralized Control ● Normal Auto ● Manual**
OM-1 N	**Accessory Shoe 4**	**● Normal Auto ● Manual**
OM10 OM10 QUARTZ	**Built onto the camera**	**● Normal Auto ● Manual**
OM-2	Accessory Shoe 3	● TTL Centralized Control ● Normal Auto ● Manual (1/60 sec. cannot be used)
	Accessory Shoe 1 or 2	● Normal Auto ● Manual
OM-1	Accessory Shoe 1	● Normal Auto ● Manual
Other Cameras	Hot Shoe	● Normal Auto ● Manual

Flash modes indicated in red provide the viewfinder charge/auto check signal.

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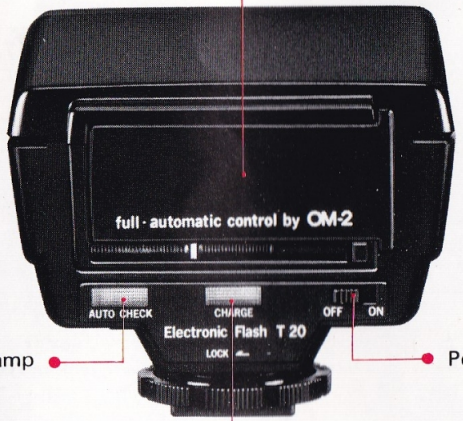
DESCRIPTION OF CONTROLS

Flash Diffuser Window

Lock Knob

NORMAL AUTO Sensor Window

External Power Socket



TTL AUTO Panel (blank)

Auto Check Lamp

Charge Lamp

Power Switch

Calculator Panel for NORMAL AUTO/MANUAL mode (indicated in meters)

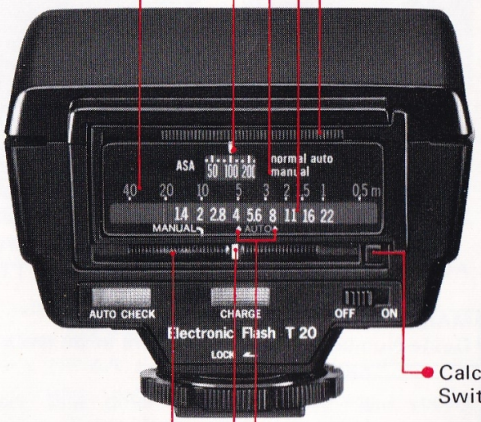
ASA Scale

Distance Scale

Aperture Scale

ASA Switching Knob

Battery Chamber Cover

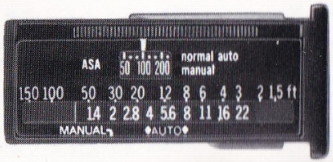


Calculator Panel Switching Button

Mode Switching Knob

Mode Switching Knob Index Mark

NORMAL AUTO Index Mark



Calculator Panel(indicated in feet)

MAIN SPECIFICATIONS

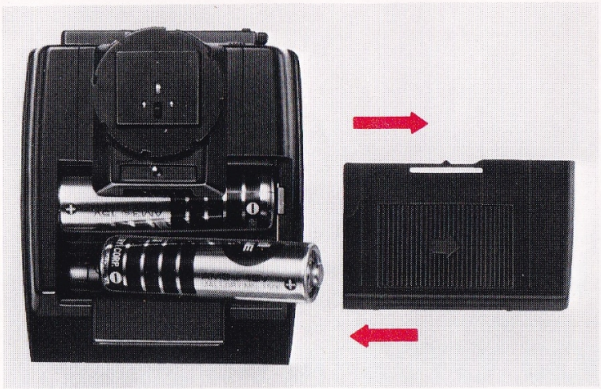
- **Type:** Energy-saving, series-circuit type TTL Centralized Control (TTL AUTO) flash unit (with normal auto and manual capability).
- **Guide Number:** 20(ASA100, meters) or 66(ASA100, feet).
- **Coverage Angle:** 40° vertical, 58° horizontal (covers picture area of 35mm lens).
- **Flash Duration:** 1/40,000 – 1/1,000 sec.
- **Recycling Time:** 0.2–10sec. with AA alkaline batteries on TTL AUTO and NORMAL AUTO (varies depending on flash-to-subject distance).
- **Flashes per set of AA Alkaline Batteries:** 120 – 500 on TTL AUTO and NORMAL AUTO (varies depending on flash-to-subject distance).
- **Color Temperature:** 5,800°K.
- **Connection to Camera**
  Mechanical: Clip-on type (via accessory shoe).
  Electrical: Direct contact (hot shoe).
- **Exposure Calculator:** Reversible plate type – blank for Olympus OM-2 (TTL Auto/Manual); calculator for OM-1, OM-10 and non-OM cameras (Normal Auto/Manual).
- **TTL AUTO (with OM-2 only)**
  Aperture Setting: Continuous, couples with aperture ring setting of camera lens.
  SBC Sensor Acceptance Angle: Matches view of camera lens.
  Working Range: 0.25–16m(10in.–53ft.)(ASA 100, F 1.2 lens).
  TTL AUTO Check: Neon-flicker indication. Viewfinder indication contact provided.
  Ready Light Check: Charge lamp and viewfinder indication contact.
- TTL AUTO Range (ASA 100)
  For Guidance Only

F1.2	3.3~16.7m(10.8~54.8ft)	F5.6	0.7 ~3.5 m(2.3~11.5ft)
F1.4	2.8~14.1m(9.2~46.3ft)	F 8	0.5 ~2.5 m(1.6~ 8.2ft)
F2	2 ~10 m(6.6~32.8ft)	F11	0.35~1.8 m(1.1~ 5.9ft)
F2.8	1.4~ 7.1m(4.6~23.3ft)	F16	0.25~1.3 m(0.8~ 4.3ft)
F4	1 ~ 5 m(3.3~16.4ft)	F22	0.18~0.88m(0.6~ 2.9ft)

* Two types of T20 are available, each incorporating a calculator panel indicated in meters or in feet.

- **NORMAL AUTO**
  Aperture Setting: 2 apertures (F4 and F8 at ASA 100).
  Normal Auto Sensor Acceptance Angle: Approx. 20°.
  Working Range: 1 – 5m (3.3ft.–17ft.) at F4,
  0.5 – 2.5m (20in. – 8ft.) at F8.
  AUTO & Ready Light Check: Same as TTL AUTO and Ready Light Check above.
- **MANUAL**
  Guide Number: 20 (ASA100, m) or 66 (ASA100, ft.) on full power flash.
  Ready Light Check: Charge lamp and viewfinder indication contact.
- **Termination of Light Emission:** Instantaneous. With power switch off, T20 will not fire even when fully charged.
- **Power Source:** ① Two 1.5V AA 'penlight' batteries (incl. Ni-Cd batteries). ② AC house current via Electronic Flash AC Adapter 2.
- **Dimensions:** 77 (D) x 68 (W) x 57 (H) mm, 160g (less batteries)
  (3 x 2.7 x 2.2", 5.6 oz.).

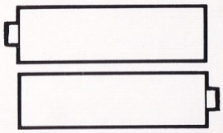
LOADING THE BATTERIES



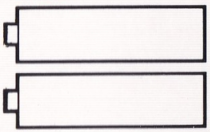
Insert two 1.5V AA size batteries properly.

There are available UM-3 type manganese batteries, AM-3 type alkaline batteries, and NR-AA type Ni-Cd batteries. Alkaline batteries last about 4 times longer than manganese batteries.

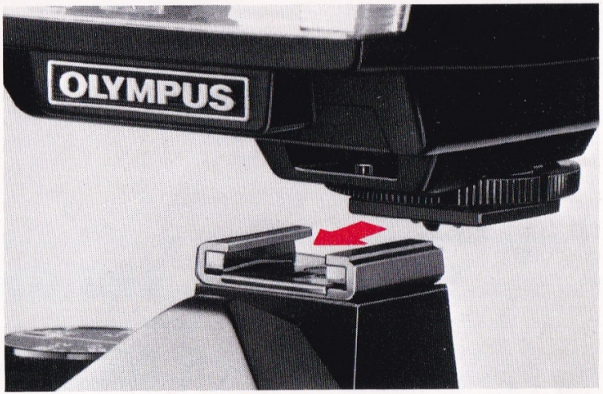
YES



NO



MOUNTING THE T20



Slide the T20 into the accessory shoe and turn the lock knob in the direction of the arrow to lock the flash in position.

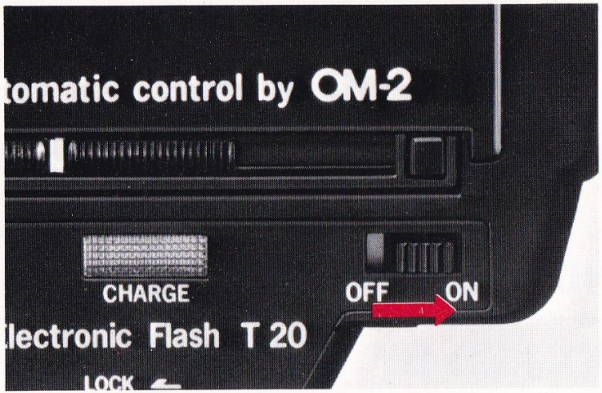
TTL CENTRALIZED CONTROL FLASH USING THE T20 AND THE OM-2

If the identification mark engraved on the top plate of your camera is "OM-2" (and not "OM-2N"), set the synchro terminal to "X" by aligning the red dot on the X and FP selector lever with the "X" indication on the flash socket.
Your camera performs TTL Centralized Control Flash with Shoe 3 as described in the following pages, but the charge/auto check indication is not seen in the viewfinder.

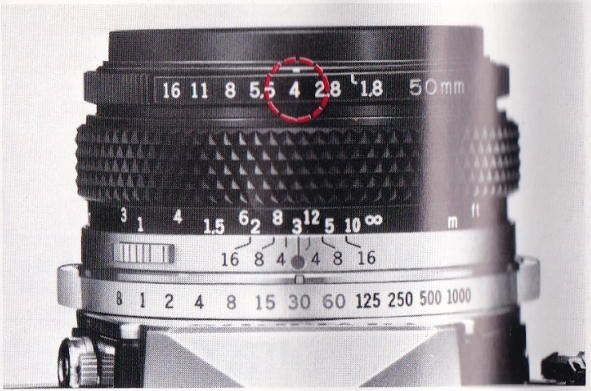
SWITCH THE T20 ON; AND THE FLASH UNIT WILL BE DIRECTLY CONTROLLED BY THE OM-2.

All dial settings required of conventional electronic flash units (ASA film speed setting, auto/manual mode switching, exposure compensation in diffused lighting, etc.) are not needed with the T20. The T20/OM-2 combination enables you to perform the easiest, most precise flash photography ever.

TTL AUTO FLASH USING THE T20 AND THE OM-2



With the calculator panel in the 'full automatic control by OM-2' position, turn the power switch to the "ON" position.

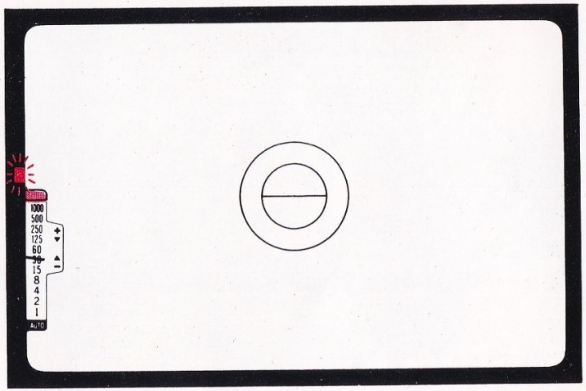


Set the camera's selector lever to "AUTO".

Set the aperture ring.

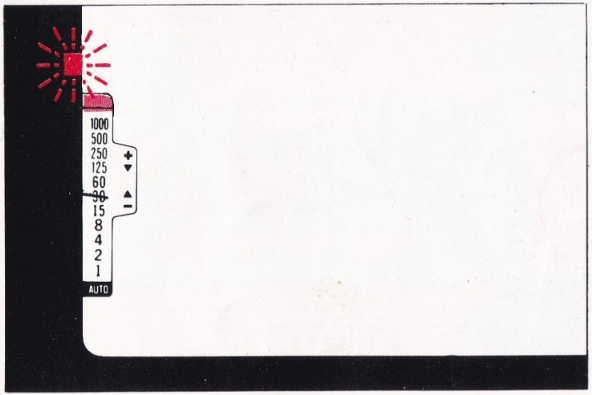
(NOTE) If you want to take pictures with existing light, turn the T20 off; the charge lamp goes out and the T20 will not fire even when the capacitor is fully charged.

* Any aperture can be used for TTL AUTO Flash photography with the T20 and the OM-2. For average indoor flash photography the aperture setting at F4 will provide good results.



Wait until the charge signal lights on.

* The charge signal can be seen both in the viewfinder and on the back of the T20.

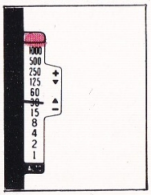


Focus and press the shutter release.

If the signal light blinks repeatedly, the picture was properly exposed by flash.

* If the signal light does not blink, but instead goes out: The subject is too far. Choose a larger aperture or get closer to the subject.
* If the signal stays lit (the T20 did not fire): The subject is bright enough and the picture was taken properly by existing light. The flash light was not needed.

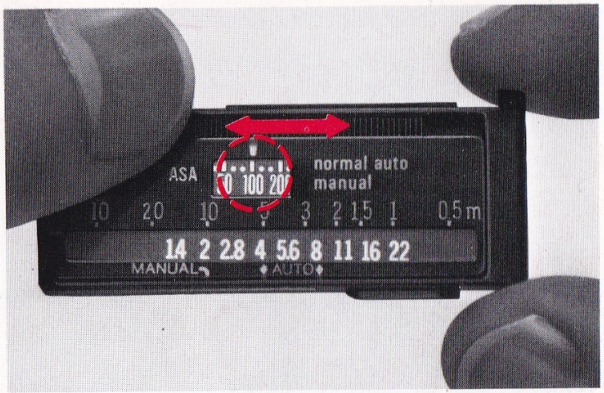
In case exposure must be achieved by flash illumination:
Turn the aperture ring until the meter needle points to 1/30 sec. or slower, and shoot.



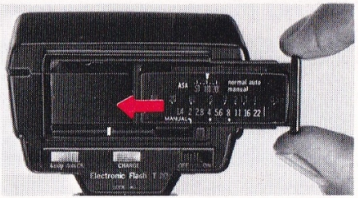
HOW TO USE THE T20
IN NORMAL AUTO FLASH PHOTOGRAPHY
WITH OM-1(& CAMERAS OTHER THAN OM)

If the identification mark engraved on the top plate of your camera is "OM-1" (and not "OM-1N"), set the synchro terminal to "X" by aligning the red dot on the X and FP selector lever with the "X" indication on the flash socket.
Your camera performs Normal Auto Flash with Shoe 1, as described in the following pages, but the charge/auto check indication is not seen in the viewfinder.

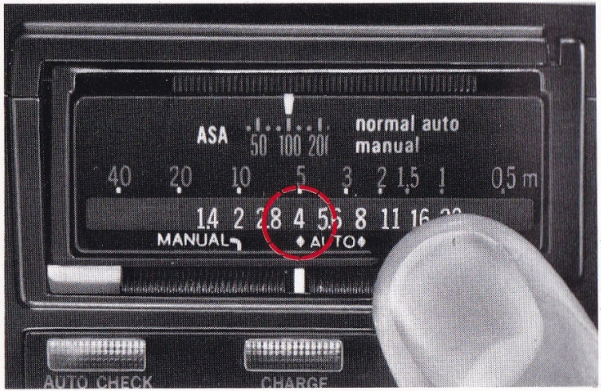
Press the button and remove the calculator panel.



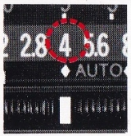
Set the ASA film speed.
Slide the calculator panel to the left as far as it will go, until it clicks into place.



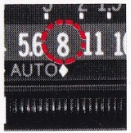
NORMAL AUTO FLASH USING THE T20 AND THE OM-1



Set the flash to "AUTO" (2 f/stop positions).



F4 for general photography with ASA100

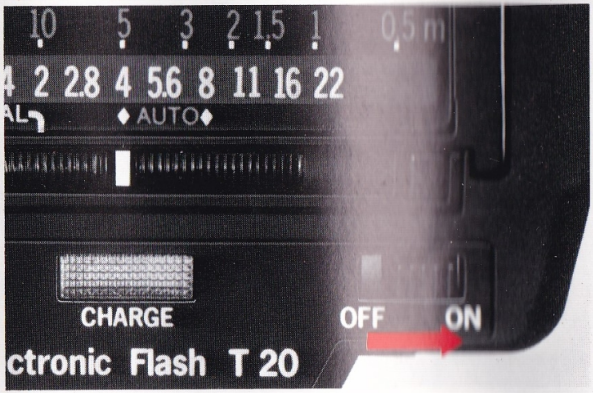


F8 for close-up photography within 1 m (3.3ft) (ASA 100)

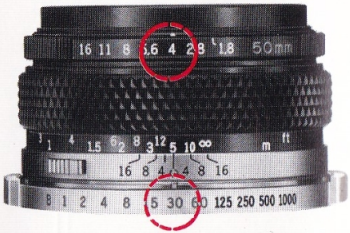
Align the white line with either one of the F numbers indicated by the ◇ marks, once you've set the proper ASA speed. Set the lens aperture at the F number indicated by the white line.

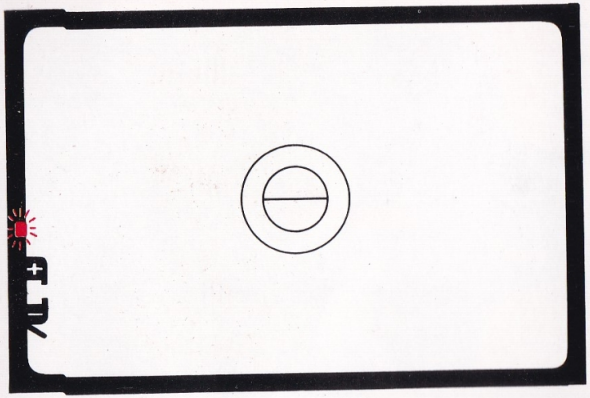
Set the shutter speed to 1/30 sec.

* The OM-1 synchronizes with electronic flash at the shutter speed of 1/60 sec. or slower. However, to eliminate any possibility of accidental dial shifting, it is recommended you use the 1/30 sec. setting.

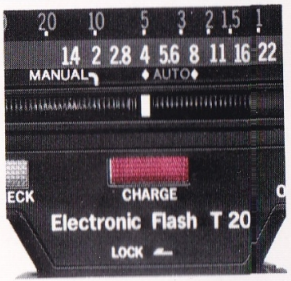


Turn the T20 ON.

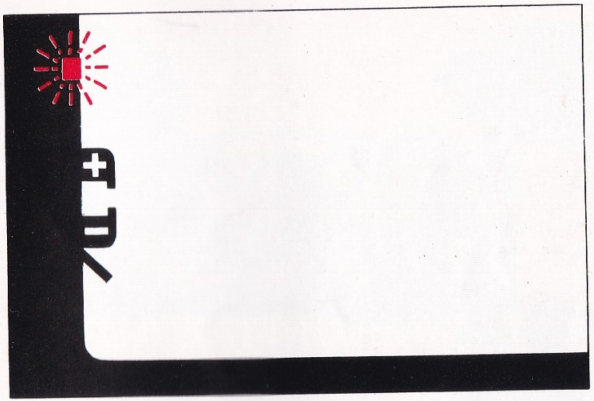




Wait until the charge signal lights on.



* The charge signal can be seen both in the viewfinder and on the back of the T20.



Focus and press the shutter release.

If the signal light blinks repeatedly, the picture was properly exposed by flash.

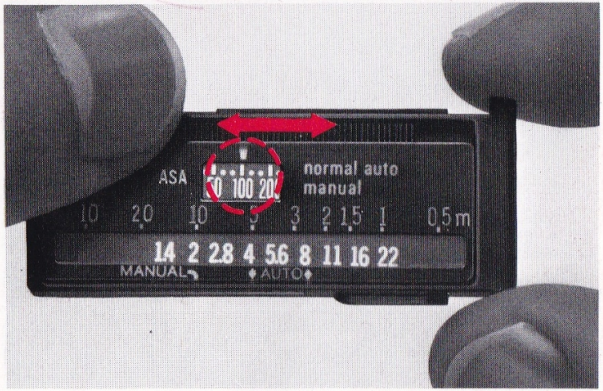
(NOTE)

* If the signal light goes out, the subject is too far. Get closer to the subject.

HOW TO USE THE OM-10 AND THE T20 IN NORMAL AUTO FLASH PHOTOGRAPHY

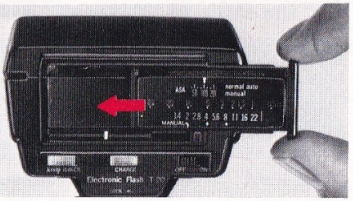
NORMAL AUTO FLASH USING THE T20 AND THE OM-10

Press the button and remove the calculator panel.

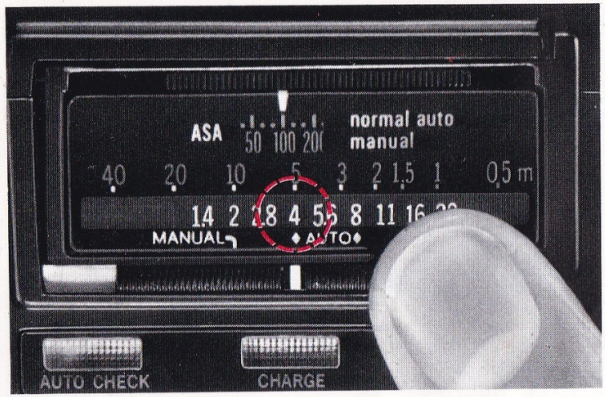


Set the ASA film speed.

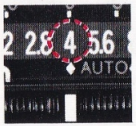
Slide the calculator panel to the left as far as it will go, until it "clicks" into place.



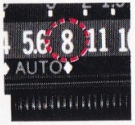
NORMAL AUTO FLASH USING THE T20 AND THE OM-10



Set the flash to "AUTO" (2 f/stop positions).



F4 for general photography with ASA 100

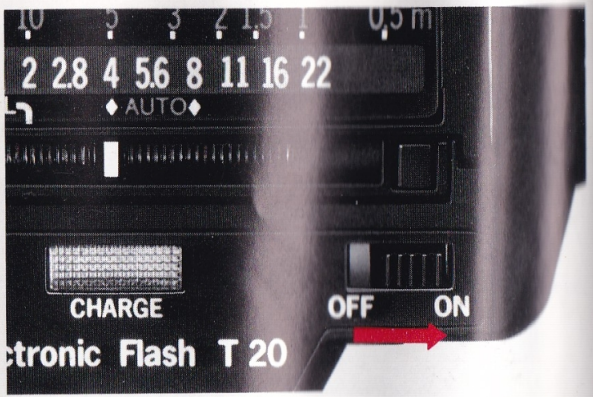


F8 for close-up photography within 1m (3.3 ft) (ASA 100)

Align the white line with either one of the two F numbers indicated by the ◇ marks, once you've set the proper ASA speed.

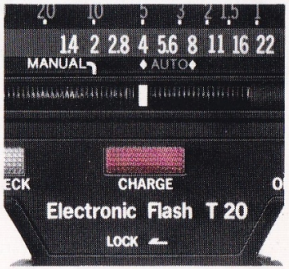
Set the lens aperture at the F number indicated by the white line.

* Shutter speed is automatically set at 1/60 second (flash synchronizing shutter speed).

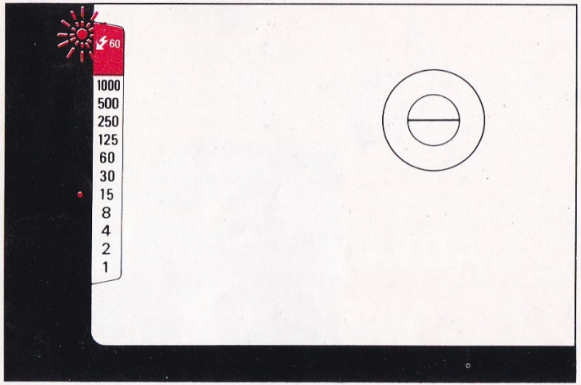


Turn the power switch of both the flash and the camera to ON.

Wait until the charge signal lights on.



* The charge signal can be seen both in the viewfinder and on the back of the T20.



Focus and press the shutter release.

If the signal light blinks repeatedly, the picture was properly exposed by flash.

(Note)

* If the signal light goes out, the subject is too far. Get closer to the subject.

ADVANCED TECHNIQUES USING THE T20 WITH THE OM-2, OM-1 AND OM-10

CALCULATOR PANEL

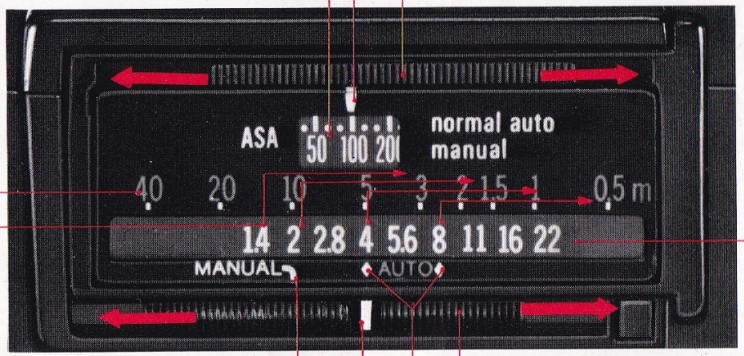
ASA Scale

Once the ASA film speed is set, the subject distance which corresponds to each aperture is shown. Remove the calculator panel and set the film speed under the index mark ▮ at the top of the panel.

ASA Index Mark

ASA Switching Knob

Slide the scale in one direction or the other in order to set the ASA film speed. The number will appear in the ASA Window.



Distance Scale

Aperture Scale

Coupling Range of TTL AUTO

Any aperture can be used for TTL Auto Flash photography with the OM-2 and the T20. The maximum usable flash-to-subject distance is approximately 14m(46ft.) with F1.4, and approximately 10m(33ft.) with F2, using ASA 100.

MANUAL Index Mark

In manual flash photography, select the F number corresponding to the flash-to-subject distance. For example, F2 for a distance of approximately 10m(33ft.) and F4 for approximately 5m(17ft.), using ASA 100.

Mode Switching Knob Index Mark

Mode Switching Knob

Slide the switch to MANUAL or AUTO. (There are two AUTO positions.) Set it at the desired click-stop position to decide the mode of photography.

NORMAL AUTO Index Mark

When set to the left index mark, the maximum usable flash-to-subject distance is approximately 5m(17ft.), using.

When set to the right index mark, the maximum usable flash-to-subject distance is approximately 2.5m(8ft.), using.

FLASH PHOTOGRAPHY IN SPECIAL SITUATIONS

Portraits at night with the sky in the background

At night with the sky in the background, or in situations in which no flash light reaches the background because it is too far, photographs of people will be over-exposed. Make the proper compensation as follows.

Compensation

<With the OM-2>

Turn the exposure compensation dial to the minus (–) side (–1 ~ –2 at click-stop positions).

<With the OM-1, OM-10, or other cameras>

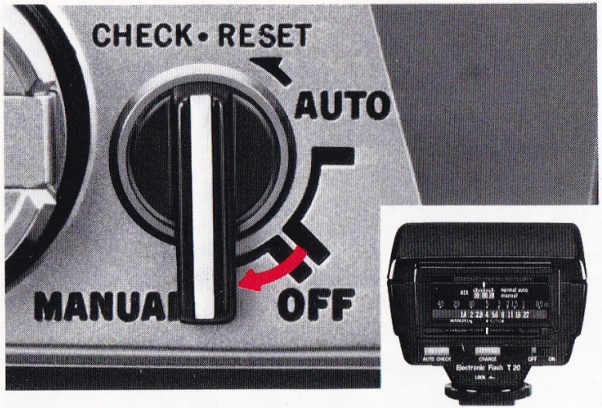
Close the lens aperture one or two F stops beyond the aperture set on the T20.

Daylight Fill-in Flash

You may often want to light a backlit subject, or the shadow under a tree, or indoors with part of the outdoor scene in the background, with good contrast in the details of the shadowy parts as well as the surroundings.

In such situations, the TTL AUTO and NORMAL AUTO operations are possible, but may be considerably affected by the existing light and subject conditions. Therefore, MANUAL operation is recommended.

MANUAL FLASH



<With the OM-2>

Set the camera's selector lever to "MANUAL".

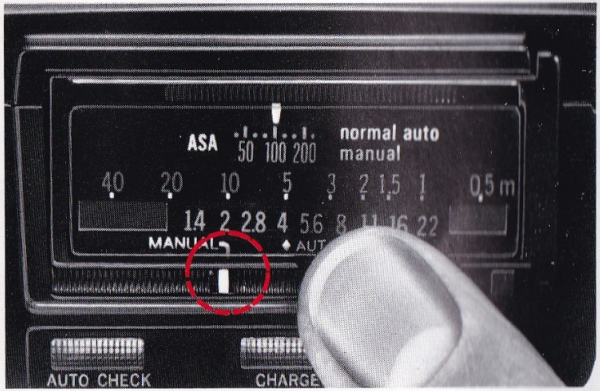
Read the F-number and set the aperture ring.

Select the aperture based on flash-to-subject distance and with a guide number of 20 (ASA 100, meters) or 66 (ASA 100, feet).

Set the shutter speed to 1/30 sec.

Turn the power switch of the T20 to the "ON" position, and press the shutter release after the signal light begins to glow.

* When set for manual control, by simply turning the calculator panel over, the relation between distance and aperture can be seen.



<With the OM-1, OM-10, and other cameras>

Set the flash at the "MANUAL" position.

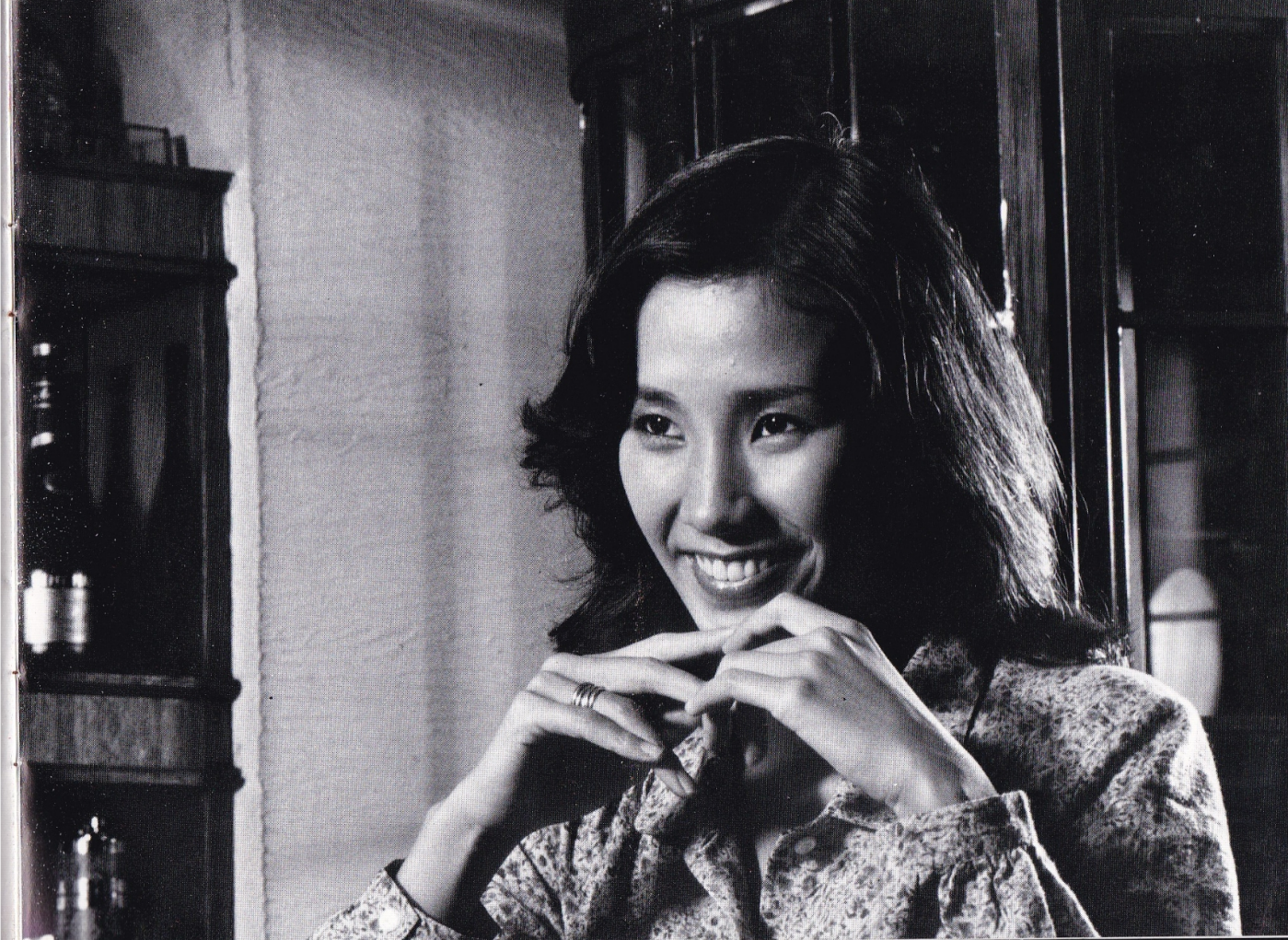
Set the aperture on the camera lens at the value which corresponds with the planned flash-to-subject distance as shown in the calculator panel.

Set the shutter speed to 1/30 sec.

* With the OM-10 (set at AUTO, and T20 turned ON), the shutter speed is automatically set to 1/60 sec., allowing flash synchronization.

Turn the T20 on and press the shutter release after the charge signal light begins glowing.

* The charge signal can be seen both in the viewfinder and on the back of the T20. In MANUAL flash operation, the lamp will not flicker.



HANDLING CARE

① As the color temperature of the T20 is similar to that of daylight, use daylight color films.
② When the T20 is attached to the camera, tighten the lock knob securely.
③ Replace both batteries at the same time and with new batteries.
④ At sub-zero temperatures, the circuits and batteries will not function normally. So, warm them sufficiently before use.
⑤ When the T20 is suddenly moved from a low to a high temperature location, condensation will not allow the flash to function.
⑥ The charge signal lamp in the camera viewfinder can often be seen brightly just after charging.
⑦ In TTL AUTO flash operation, do not remove the power plug when taking pictures with the AC Adapter. The flash will emit its full light output.
⑧ In TTL AUTO flash operation, use Accessory Shoe 3, when combining the T20 with the OM-2 (which is engraved with the symbol mark "OM-2"). In MANUAL, with the same combination, set the shutter speed lower than 1/30 sec. The 1/60 sec. shutter speed does not synchronize with flash.
⑨ Cameras without hot shoe cannot be used.
⑩ Handle the Calculator Panel with care.

CARE FOR STORAGE

① Do not exert stronger force upon the T20 than it needs, when it is attached to or detached from the camera.
② Do not apply excessive pressure to the flash diffuser window.
③ Do not hit the flash unit and do not let it strike any hard object.
④ Do not keep the unit in locations where humidity is high.
⑤ Do not leave the unit in places with temperature over 122°F (50°C).
⑥ Leaving the switch ON shortens battery life.
⑦ When the flash is not to be used for a long period of time, remove the batteries to prevent leakage.
⑧ To carry the unit conveniently, put it in an accessory leather case or the Lens Pouch 100.

RED EYE EFFECT

"Red Eye" is the phenomenon experienced when the subject's pupils appear red in color photographs made by flash. It occurs when the flash enters directly through the subject's pupil and is reflected by the retina into the camera lens. It usually occurs in relative darkness when the pupil remains open.

To minimize this problem:

1. Illuminate the room so that the pupil will not dilate. Also effective is having the subject look at a bright light before taking the picture in order to narrow the pupil.
2. Widen the distance between the flash surface and camera lens by using the Power Bounce Grip 2, TTL Auto Cord or the Electronic Flash Extender between the flash and the hot shoe.
3. Bounce flash prevents "red eye" effect completely.
4. Sophisticated professionals avoid photographing subjects straight-on, not only to avoid "red eye" but to enhance photographic quality. Shooting from an angle provides modeling light which is artistically more appealing by eliminating the unattractive effect flat lighting provides. It is preferable to avoid having the subject look directly into the lens for the same artistic reason.

OM SYSTEM

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